

A Content Analysis of the Journal of Student Research: Exploring the Research Culture of a University

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ABSTRACT

The purpose of this project was to gain better understanding of the research culture of the university by conducting a content analysis of the articles in the university student journal. The University of Wisconsin-Stout Journal of Student Research had its inception twelve years ago. An analysis of its contents has yet to be conducted. In order to gain greater understanding of the research culture at this university, the faculty-researcher and student-researchers co-conducted a content analysis of the university-based journal. Reported are findings from the following areas: total number of articles, authoring practices, advising patterns, count by department, attention to ethics, identification of article type, and content areas within articles. Implications for the journal, as well as student, faculty advisors/authors, and the larger university community are discussed.

Keywords: advising, authoring practices, collaborative research, college students, content analysis, research ethics, research integrity, student research, university journal, university publication, university research, university students

INTRODUCTION

During the 2013-2014 academic year, the University of Wisconsin-Stout (UW-Stout) began the process of identifying itself as an "applied research institute" (ARI) or "emerging research institute" (ERI; Bomar et al., 2014). Simultaneously, the faculty-researcher (M.L.C.B.) was awarded a Center for Applied Ethics Scholar position and related grant, became a member of the ERI university committee, and began teaching a graduate level research methods course. The faculty-researcher became curious about the research culture of the university as a whole, particularly as it was more formally defining its research identity. The faculty-researcher believed it was imperative to examine the research practices of the institution as it makes this transition (Blumer, Buchanan, & Klucarich, 2014a). One way to explore the research culture of the institution was via a content analysis of the student journal.

Background and Literature Review

With the overarching aim of learning more about the research culture at this particular institution, the faculty-researcher co-conducted a content analysis of the journal of the university with a team of student-researchers. The Journal of Student Research (JSR) at this institution was born out of an idea by the administration to have a “faculty journal of research” (Foxwell, 2013). When faculty learned of this idea, the overwhelming response was that such a journal would not be beneficial to faculty publication records due to the need for faculty to publish outside of the university in peer-reviewed scholarly journals (Foxwell, 2013). The faculty did agree that there was value in having a university-based scholarly journal, but they believed a “student journal of research” would be more appropriate (Foxwell, 2013). The response by the faculty over a decade ago appears consistent with the current research culture of the UW-Stout (Blumer et al., 2014a). Indeed, results from a recent mixed-data survey study demonstrate that when discussing research productivity, while the majority of participants had not participated in research in the role of researcher ($n = 623$, 62%), of those who had, most reported that their experiences had been conducted collaboratively ($n = 80$, 62%) with the most common collaborators being students ($n = 52$, 65%) (Blumer et al., 2014a). Thus, there is a clear valuing of student involvement in research at this university.

In the early 2000s, shortly after this larger university dialogue, the university Research Services Director, with the help of a quarter-time graduate assistant, was assigned the project of co-creating, and co-supervising the production of a student research journal to be completely produced by students (Foxwell, 2013). The team was given a year from inception in 2001 to first printing in 2002, and despite this short time frame, the team was successful in producing a student-focused research journal (Foxwell, 2013). In 2005, the JSR was acknowledged by the University of Wisconsin-System (UW-System) Board of Regents for facilitating such an impressive source of applied research carried out by students, and for the leadership provided by the UW-Stout in developing the journal (Foxwell, 2013).

Since the inception of the JSR, approximately 173 articles have been published between the years of 2002 and 2013, yet a content analysis has not been conducted. Moreover, a thorough review of the larger body of peer-reviewed scholarly literature to date yielded no like analyses—those aimed at analyzing the content of a student or a university-based journal. Again, exploring the content of a student journal is one way of telling us more about the research culture of an institution over time. To this end, analyzing publications in an academic journal represents one way of demonstrating

research productivity and performance—or the extent to which researchers are involved in the academic community (Chung & Petrick, 2011; Green & Bauer, 1995). Thus, an analysis of trends in academic publications is essential in order to assess an institutional community's previous, current, and potential commitment to research (Chung & Petrick, 2011).

Although, there is no known scholarly research on this university and/or on student journals in general with regard to exploring things like research productivity or performance, scant research does exist on the research productivity of graduate students. For instance, Chung and Petrick (2011) examined the research productivity of doctoral students within the field of tourism and hospitality. Using an alternate regression model, the researchers identified significant factors influencing the students' scholarly publications within major journals of the field. The researchers found that two variables significantly influenced doctoral student publications —productivity of one's co-authors and the model of involvement in research programming by the institution.

Purpose

The purpose of this study was to conduct a content analysis of the articles in a university-based student journal in order to better understand the research culture of the university. All ten of the master's level marriage and family therapy (MFT) graduate students enrolled in the spring 2014 MFT 765: Research in Psychotherapy course were included as members of a research team on this content analysis. To identify the content contained within the JSR, the team completed the analysis on every volume—from the first year to the last (at the time of the content analysis)—2001 to 2013. In the analysis, the team focused on the following areas: methodology, departments/programs, topic areas, authorship, attention to ethics, focus on diversity, and potential clinical implications and applications .

METHODS

Before beginning this content analysis, all of the members of the research team successfully completed the university human subjects training. In addition, institutional review board approval in the form of an exemption was obtained in January of 2014.

Categorical Analysis Process Procedure

The process for this content analysis was guided by procedures in previously published content analyses lead by the faculty-researcher (i.e., Blumer, Green, Knowles, & Williams, 2012; Blumer, Hertlein, Smith, & Allen,

2014) that focused on content areas within the family therapy field, which is the faculty member's primary discipline. In the current content analysis, the team began by dividing up the twelve volumes of the JSR. Student-researchers self-selected one journal to analyze from volumes 1-9, and 11. These ten volumes were divided up in this manner as they were the smallest in terms of total pages. The remaining two volumes, 10 and 12, were divided by number of pages with most student-researchers having 15 pages per volume to analyze. In addition, the faculty-researcher had roughly 175 pages in one volume to analyze, and 15 pages in the other. Upon the division of all of the content, the researchers had relatively the same number of pages, which was between 150-200.

After the dividing of the journal content, team members began reading the articles independently. While reading, the team had general instructions to be thinking about what the content reveals with regard to: 1) the research culture of the university and about research with and by students, 2) a range of topics and how they apply to their clinical work with people across a variety of backgrounds, and 3) how to conduct a content analysis and engage in research in a collaborative manner. Reported in this manuscript are the findings related to what the JSR content might reveal about the university research culture. Next, the faculty-researcher organized the 173 articles into a summary table by volume of the journal, year of publication, number of articles within the publication, and author classification (see Table 1.) regarding the fit of coding content into certain categories occurred. During this conversation, the research team discussed the need for greater clarity in the definition of certain categories. One area that needed greater clarity was determining whether the content fit into a definition of research, and relatedly, what kind of research method said content was considered. The research team shared that it was difficult to determine if some of the content of the journal was indeed research, because a definition of research was not evident within the journal itself nor in many of the articles. To this point, the faculty-researcher consulted with the Research Services Director, and the definition of the university as an ARI was agreed upon as the most apt definition to use for the sake of the analysis. In this context research is defined as "the original, uniquely human endeavors that contribute intellectually or creatively to a discipline."

Other questions that the team needed greater clarity around included, "What kind of attention do we mean that the researchers are paying to ethics? Is it overt attention (i.e., focus of or mentioned in study, institutional review board approval mentioned, etc.) or covert attention (i.e., intuit ethical attention based on information, but not mentioned)?" As a result of these

type of method while others did not, nor was it obvious via review of the content itself. Based on this dialogue, the team decided to code the following categories of research methods: quantitative, qualitative, mixed, literature review, and unspecified. The team agreed the “unspecified” categorical coding would be used at times when the method was not made explicit, nor was the method possible to intuit based on review of the content.

Compiling of the Content Analysis

After this discussion, the research team completed their categorical coding of their content, and the student-researchers submitted their content analyses. The faculty-researcher then began to compile the various content analyses into one comprehensive analysis. This compilation was shared with the team as a whole for peer review and fidelity checking. The research team reviewed the compilation and confirmed that it was representative of their individual content analyses, and the agreed upon categories. For further fidelity checking and peer reviewing categorical findings were then shared with members of the Center for Applied Ethics as a final trustworthiness check before dissemination to the larger university community, student journal, and dissemination outside of the university setting. After the completion of these final steps, the categories from the JSR were finalized and are presented below.

Findings

The primary topic area of each of the JSR articles is summarized in Table 2. The research team anticipated that content themes would emerge, be easily identifiable, and be shareable in a more meaningful and condensed manner. Instead, the team discovered much variability in the topic areas, and thus were unable to recognize patterns within the content itself by topic.

Yet, when the team examined the content of each of the articles by department and faculty adviser/author, clear patterns emerged. The pattern that emerged from this part of the analysis revealed that three departments have produced much more (i.e., more than 20 articles over the twelve year period) than others—namely the departments of Human Development and Family Studies, Art and Art History, and Engineering and Technology. To further assess representation, the team summarized the frequency in which faculty members advised students and their projects that were published in the JSR. The pattern that emerged mirrors the departments with the most publications. In other words, the most frequent advisors of students publications were from the three departments that produced the highest volume of student publications—namely S. M. Wolfgram., C. Lume, and C. K. Sand,

respectively.

In addition to these areas emerging as patterns revealing more about the research culture of the journal and relatedly, the university, patterns about the research methods were revealed. From this analysis, the following methods were used most to least frequently: quantitative ($n = 72$, 41.62 %), unspecified ($n = 58$, 33.53 %), literature review ($n = 21$, 12.14 %), mixed ($n = 11$, 6.36 %), and qualitative ($n = 6$, 3.47 %).

Lastly, by examining author attention to ethics across each of the articles per publication year, more patterns, with regard to the research culture, were uncovered. From this analysis, attention to ethics appears variable, yet with a slight increase over time. However, ethics is not being attended to in the majority of the articles ($n = 101$, 58.4%). In the instances in which ethics is being addressed, it is more commonly attended to in an overt or purposeful manner ($n = 58$, 33.53 %) than in a covert one ($n = 14$, 8.1%).

Discussions and Implementations

Given that this was the first content analysis of its kind in this university setting, and likely across university settings, there are several findings warranting discussion. Additionally, there are related implications for students, faculty advisors/authors, the journal, and the larger university community. In general, findings from this content analysis do provide greater information with regard to the research culture of this university.

Variety of Topical Content Areas

In analyzing the content in the JSR in terms of the kinds of topics covered, the clearest theme that emerged was that there is a great range of topics upon which students conduct research. The team was particularly impressed with the depth and breadth of content within the journal, especially in the context of the research being primarily student generated. What made the reading of the research articles more interesting was that the content was so varied and interdisciplinary in nature. The team went on to share that this made for a more enriching learning experience than if the team had conducted a content analysis that focused upon a field-based journal. Rarely do students and scholars have time, need, or interest to read outside of their disciplines, thus this content analysis made for a unique scholarly opportunity.

What will aid scholars of the future in reading, citing, and perhaps replicating some of the projects within the JSR is that they will now be able to refer back to Table 2 to see exactly which topics are covered in which volume. This format may make the accessing of the content of the journal

queries, and the discussion around them, the team decided to indicate if there was attention to ethics, and if so, whether it was overt or covert attention.

Table 2

Year	Topic Areas
2002	• Customer service
	• Evaluation, No Child Left Behind Act, Family impact analysis
	• Program promotion, Eating fruits and vegetables
	• <i>M. capsulatus</i> , <i>M. trichosporium</i> methanotrophs, Peat bogs
	• Metal: X, Hazardous wastewater treatment, Gallium arsenide wafers
	• Administrative assistant competencies, Technical colleges
	• Closed pumping systems
	• Sexual harassment, Hospital industry
	• Chemical transportation, Terrorism
	• Calcium gluconate, Zephiran, Hydrofluoric acid treatment
	• Supercritical carbon dioxide, Solvents, Semi-conductor industry
	• Stirling engines
	• Organizational justice, Organizational citizenship behaviors
2003	• Audio prescription, Labeling system
	• Audio prescription, Labeling system Humor, Therapy, Counseling
	• Hypergeometric functions
	• Parental responsibility, Juvenile behavior
	• Mineral content, Canning quality
	• Texture screens, Photo printing
	• Enzyme kinetics
	• Student/faculty, Alcohol and other drugs, AODA
	• Gender, Premature termination, Therapy, Counseling
	• Oxygen consumption, Muscle respiration
2004	• Self-esteem, Gender, Memory, and Advertisement
	• High grade paper production, Pulp additives
	• Covenant marriage, Family impact analysis

	<ul style="list-style-type: none"> • Medical devices, Medical packaging, Sterilization, E-Beam technology
	<ul style="list-style-type: none"> • Safety syringe programs, Medical setting
	<ul style="list-style-type: none"> • Twin-injection molding system, Cost savings
	<ul style="list-style-type: none"> • Packaging color, Customer attraction
	<ul style="list-style-type: none"> • Child-resistant packaging, Senior-friendly medical products
	<ul style="list-style-type: none"> • Medical package testing, Integrity testing
	<ul style="list-style-type: none"> • Design exploration, Utility patents
	<ul style="list-style-type: none"> • Business marketing strategies, Rural Indian markets
	<ul style="list-style-type: none"> • Gender stereotypes, Contemporary culture
2005	<ul style="list-style-type: none"> • Nanocomposite technology materials
	<ul style="list-style-type: none"> • Team conflict, Workforce, and Conflict resolution, Work team
	<ul style="list-style-type: none"> • Packaging materials, Advertisement choices
	<ul style="list-style-type: none"> • Short-term memory, Auditory stimuli, Visual stimuli
	<ul style="list-style-type: none"> • University students, Home to college transition
	<ul style="list-style-type: none"> • Male odalisque
	<ul style="list-style-type: none"> • Ominous atmosphere
	<ul style="list-style-type: none"> • Aluminum bottles
	<ul style="list-style-type: none"> • Packaging, Over-the-counter market, OTC market
	<ul style="list-style-type: none"> • Schools, Obesity
	<ul style="list-style-type: none"> • China, Shipping
	<ul style="list-style-type: none"> • Instructional design, Complex learning
	<ul style="list-style-type: none"> • Recycling, Community improvement
2006	<ul style="list-style-type: none"> • Psychological responsibility, Generation Y, Millennial generation
	<ul style="list-style-type: none"> • Iris recognition
	<ul style="list-style-type: none"> • Molecular analysis, Grasshoppers, Prairie restoration
	<ul style="list-style-type: none"> • Functional foods, Blueberry muffin
	<ul style="list-style-type: none"> • Over-scheduled children, Childcare workers
	<ul style="list-style-type: none"> • Social justice, Creative work
	<ul style="list-style-type: none"> • Art structure, Creative work
	<ul style="list-style-type: none"> • Art exaggeration, Creative work

	• Behavior change, Transtheoretical
	• Gender differences, Caregiving, Male caregivers,
	• Maple syrup, Chemical properties, Physical properties
	• Peer interviewing, Business, Training
2007	• Child custody placement, Social work students
	• Morpholino oligonucleotides injection techniques, Embryo production, Brine shrimp survival, Functional genomics, Zebra fish
	• University students, Lexicography, Pop, Soda
	• Media, Gender stereotypes, Body image, Female college students
	• Eating disorders, Male college students
	• Japan, Efficiency, Recycling methods
	• Photographs, Domestic animals, Exotic animals, Stress levels
	• University students, Marriage, Graduation, • Post-graduation marriage
	• Creative work, Life and Death, Fate and Eternity
	• Creative work, Separation eternal
	• Creative work, Mugs, Trays
	• Creative work, Seascape
	• University students, Infidelity
	• Fingerprint identification systems, Edge detection, Feature extraction
	• Traditional college freshman, University students, High school counselors, College preparation
	• Measuring bacteria, Colony count, Environment
	• Ultraviolet/electron beam inks, Cost reduction, Performance, Efficiency
	• Alcohol and other drugs counselors, AODA, AODA counselors, Methamphetamine, Substance use, Children
	• University students, Lesbian, Gay, Bisexual, Transgender, LGBT
	• Female college students, Abuse, Abusive relationships, Abuse re-entry
	• Protecting wetlands, Managing wetlands, University
2008	• Gender stereotypes, Altruism

	<ul style="list-style-type: none"> • Knowledge management, Organizational culture, Organizational structure
	<ul style="list-style-type: none"> • Family support, Inmates, Incarceration
	<ul style="list-style-type: none"> • Virtualization, VMware, Performance testing
	<ul style="list-style-type: none"> • Childhood obesity, Nutrition, and Physical activity
	<ul style="list-style-type: none"> • Creative work, Bingo, Bargain shopper
	<ul style="list-style-type: none"> • Creative work, Migration
	<ul style="list-style-type: none"> • Creative work, Big boned, Mattress, Neighbor
	<ul style="list-style-type: none"> • Creative work, Furless, Weight
	<ul style="list-style-type: none"> • Discipline practices, Intergenerational transmission, Corporal punishment
	<ul style="list-style-type: none"> • Vocational evaluation, Assistive technology, Persons with disabilities
	<ul style="list-style-type: none"> • Divorce, University students, Marital status, Guardian relationships, Committed relationships
	<ul style="list-style-type: none"> • Community visioning, Community intervention, Change agent, Community collaboration
	<ul style="list-style-type: none"> • Heart disease, Lipid profile, Cholesterol, Cranberry seed oil
2009	<ul style="list-style-type: none"> • Caddis fly larvae, Visual system, Light response
	<ul style="list-style-type: none"> • Gift giving, Mental stress
	<ul style="list-style-type: none"> • University student education, University student comfort, Lesbian, , Gay, Bisexual, Transgender, LGBT
	<ul style="list-style-type: none"> • Game-based learning
	<ul style="list-style-type: none"> • Natural inspiration, Art
	<ul style="list-style-type: none"> • Memory, Human psyche, Art
	<ul style="list-style-type: none"> • Double standards, Language usage, Language usage expectation
	<ul style="list-style-type: none"> • Containment, Protection, False protection
	<ul style="list-style-type: none"> • Parent communication styles, University students, Sexual attitudes
	<ul style="list-style-type: none"> • Technology skills, Online classes
	<ul style="list-style-type: none"> • Hiring discrimination, Employment discrimination, Tattoos, Piercings
	<ul style="list-style-type: none"> • E.coli, E. coli removal, Produce, Household agents
	<ul style="list-style-type: none"> • Adoptive parents, Children with disabilities
2010	<ul style="list-style-type: none"> • Infidelity, University students

	• Vacuum brazing technology, Silicon carbide
	• University students, Visible body modification, Employment
	• Sustainability, Biodegradable-based plastics, Petroleum-based plastics
	• Recidivism, Jail, Male inmates
	• Metal Joints, Metal brazing, Silicon nitride, Micro hardness
	• University students, Health insurance, Uninsured
	• Gender attitudes, Homosexuality, University students
	• International adoption, Adoptive parents, Assimilation
	• African-Americans, African-American culture, African-American jubilee
	• Green tea, Storage, Antioxidants
	• Parenting styles, University students, Personal agency
	• Ceramics, Stacker jar, Art
	• Painting, Bud vase, Art
	• Painting, Self-discovery, Art
	• Acrylic, Art
2011	• Infidelity, University students
	• Microphages, Gene expression, Conidial germination
	• Globalization, Globalization theory, Conflict resolution strategies, Conflict resolution
	• Pre-meal Beverage consumption, Beverage consumption Weight management, Weight management tool
	• Gender, University alcohol policy, University students
	• Socioeconomics, Dropout rates, School dropout
	• Incarceration, Incarcerated fathers, Fathers, Family involvement
	• Skin color, Ambiguous aggression
	• Art expression
	• Creative work, Core
	• Creative work, One and a thousand nights
	• Gender Differences. University students, Marriage, Marital attitudes, Marital beliefs
	• Accuracy, Comprehension, Fluency, Guided reading, Instruction, Running record
	• Parent peer support, Child mental health

	•Hmong women, Gender roles, Decision-making
	• Gender, Tanning, University students
	• Facebook, Hiring, Recruitment tools
	• Career development, Gender, University students
	• Male college students, Masculinity, Contemporary Masculinity, Media
2012	• Foster children, Foster mothers
	• Isamu Noguchi, Sculpture, Utopian Landscapes, Playgrounds, Gardens
	• African-American students, Social integration, Racial identity development, White institution, Student organizations
	• Adoption, Media, Welfare spending
	• On-site childcare, Childcare, University childcare, Parenting, Parental attitudes
	• Low income households, Low income, Private transportation, Quality of life
	• Gender differences, Cyber bullying, Symbolic interaction
	• Cover crop, Rye, Invasive plant species, Native ecosystems
	• Mixed media art
	• Contemporary art
	• Ceramic craft
	• Clay art, Sin
	• Bees, Bee guts, Colony collapse disorder
	• Immunology, Immune response, Macrophages
	• Loungewear, Nightwear, Consumer trends, Sleepwear
	• Lithography, Budget, Adhesives, Inexpensive material
	• Hedonic hunger, Hedonism, Hunger, Age, Gender
2013	• Soren Kierkegaard, Albert Camus, Spiritual truth, Leap of faith
	• Inonotus obliquus, Bioactive effects, Cultured human cells, Cancer therapy
	• Nanomaterials, Crystal structure
	• Human immunodeficiency virus, Acquired immune deficiency syndrome, HIV/AIDS, Early childhood education, Acceptance, Child study centers

	<ul style="list-style-type: none"> • Information technology, Communication technology, Elder adults
	<ul style="list-style-type: none"> • Cinematic observation, Film viewership, Film, Environmentalism
	<ul style="list-style-type: none"> • Native wet prairies, Invasive competitive plants
	<ul style="list-style-type: none"> • Transformation, Creative work
	<ul style="list-style-type: none"> • Creative work, Half-moon
	<ul style="list-style-type: none"> • Creative work, Memory
	<ul style="list-style-type: none"> • Creative work
	<ul style="list-style-type: none"> • Potassium chloride, Potassium-based emulsifying salts, Emulsification, Emulsifying salts, Sensory, Pasteurized processed cheese
	<ul style="list-style-type: none"> • Online content, Online trust, Online credibility

Categorical Analysis Coding Process

Table 1. *Information on Journal of Student Research Articles*

Volume	Year	Number of Articles	Author Classification
1	2002	13	6 undergraduate 8 graduate
2	2003	10	18 undergraduate 11 graduate
3	2004	12	12 undergraduate 1 graduate
4	2005	13	14 undergraduate 0 graduate
5	2006	12	12 undergraduate 5 graduate
6	2007	21	30 undergraduate 0 graduate
7	2008	14	12 undergraduate 6 graduate
8	2009	13	15 undergraduate 3 graduate
9	2010	16	25 undergraduate 0 graduate
10	2011	19	29 undergraduate 2 graduate
11	2012	17	20 undergraduate (15 senior, 5 junior) 1 graduate
12	2013	13	15 undergraduate (13 senior, 2 junior) 3 graduate

All of the 173 articles were reviewed through several coding and categorizing processes (as briefly described below).

Initial Categorical Coding

In order to explore the content of the articles, the team developed their own coding process and related categories. The first-order categorical coding was conducted by the faculty-researcher after having conducted a review of the literature around exploration of institutional research cultures. The first-order categories were presented to the student-researchers and included: volume of journal, year of publication, authorship, research method, department/program affiliation, topic or area of focus within the article, and attention to ethics.

Secondary Categorical Coding

With the categories to code in place, the research team began further reviewing and coding the articles within their respective journals. A dialogue regarding the fit of coding content into certain categories occurred. During this conversation, the research team discussed the need for greater clarity in the definition of certain categories. One area that needed greater clarity was determining whether the content fit into a definition of research, and relatedly, what kind of research method said content was considered. The research team shared that it was difficult to determine if some of the content of the journal was indeed research, because a definition of research was not evident within the journal itself nor in many of the articles. To this point, the faculty-researcher consulted with the Research Services Director, and the definition of the university as an ARI was agreed upon as the most apt definition to use for the sake of the analysis. In this context research is defined as "the original, uniquely human endeavors that contribute intellectually or creatively to a discipline."

Other questions that the team needed greater clarity around included, "What kind of attention do we mean that the researchers are paying to ethics? Is it overt attention (i.e., focus of or mentioned in study, institutional review board approval mentioned, etc.) or covert attention (i.e., intuit ethical attention based on information, but not mentioned)?" As a result of these queries, and the discussion around them, the team decided to indicate if there was attention to ethics, and if so, whether it was overt or covert attention.

Categorical Coding

A final conversation on the coding of categories took place. At this time the team discussed the need to further clarify the options when coding various forms of research methods. Some of the articles explicitly stated the

to date more readily accessible. In addition, despite the fact that there was great variety in the topics contained within the JSR, there were some topics that had greater representation than others. For instance, content related to: university students, alcohol and drugs, binary genders, sexual orientation minorities, adoption, technology, infidelity, and packaging, were some of the topic areas with greater representation. Thus, authors interested in submitting a piece focused in one of these content areas, upon submission, may benefit from articulating how their work is similar to and different from those works previously published in one of these areas.

Frequency of Publication by Department and Faculty Advisor

As was noted in previous literature, measuring publications in academic journals allows for assessment of a community's historical, present, and future commitment to research (Chung & Petrick, 2011). In considering the number of publications per year, this community has demonstrated a commitment to consistent publication, as the total count has never been fewer than 10 articles per volume. In more recent volumes, there have been as many as 19 articles per volume. In considering this general increase in articles, one could speculate that the commitment to research, and relatedly dissemination, has grown over time. When considering this finding in the context of publication by department, however, such a commitment to research and dissemination may not be occurring evenly across the university, as some departments are producing more than others.

There are any number of reasons for this discrepancy across departments. For instance, there may be limited resources to support research endeavors in some departments (e.g., those without graduate programs, graduate assistants, research courses, research equipment, well-defined research expectations, etc.), making it challenging for faculty to find the time to co-conduct and/or advise student research. If such research is not being conducted, it cannot be disseminated. Another possible reason why some departments may not be represented as frequently in the JSR could be that students and faculty are publishing, but doing so elsewhere. Findings from the mixed-data study of the university community as a whole lend support to this point (Blumer et al., 2014a). Indeed, Blumer and colleagues (2014a) found that while the bulk of respondents reported they had not participated in research in the role of researcher, of those who had their most frequent venue for dissemination was in peer-reviewed journals.

It may also be the case that research dissemination in the JSR is not occurring evenly because of differences in co-authoring and advising practices, as well as the model of involvement in research that is being employed

within departments. Returning to the literature, Chung and Petrick (2011) found that two variables influence student productivity—the productivity of one's co-authors and the model of involvement employed in research programming by the institution. In the context of the current analysis, a theme that seemed to influence productivity in students was the faculty advisor, who in some instances served as a co-author.

Some advisors were repeatedly able to motivate students to engage in and disseminate their research. Perhaps, it is the case that these particular faculty advisors may have a well-defined and described model of involvement in research programming that serves as a guide for their students, or they themselves have become a model in inspiring their students to engage in research. For instance, one of the faculty advisors, whose students frequently publish in the JSR, provides advisees with specific guidelines, directions, and expectations around their research projects, as well as remains collaborative in their involvement with the students in conducting their projects from start to finish. In addition, the advisor provides the students with a template, as well as published examples, to assist them in disseminating their projects for publication in the JSR and/or other academic venues.

As the findings from the mixed-data survey study of the larger university community reveal, although, the bulk of participants have not conducted research, more than half of them, including students, would like to do so ($n = 506, 50.5\%$) (Blumer et al., 2014a). In addition, there are benefits for students who engage in research (Nagda, Gregerman, Jonides, Hipel, & Lerner, 1998; Prince, Felder, & Brent, 2007). For example, student retention is improved when undergraduate students collaborate with and are mentored by faculty on research (Nagda et al., 1998; Prince et al., 2007). Thus, an implication from the current content analysis seems to indicate that there may be benefits for those students who are publishing in the JSR and relatedly who are being advised by faculty mentors. As some faculty advisors appear to have more experience and related expertise, perhaps it would be beneficial for them to mentor or conduct a training for less seasoned faculty advisors on the "how-to's" of successfully guiding students through research and related dissemination processes.

Precision of Research Practices

Quantitative methods are the most frequent methodology utilized by authors in the JSR. This finding parallels reports that quantitative methods are most common across scholarly journals in general (Hunter & Leahey, 2008; Sullivan, 2001). This is most likely because quantitative investigation dates back to times when people first started counting and recording events. With the formalizing of the scientific method, rooted in the positivist frame-

work, quantitative research methods began to take shape in the way that we recognize such methodologies today (Sullivan, 2001).

That both qualitative and mixed methods were utilized less frequently than quantitative methods also parallels the frequency of these research methods disseminated outside of the university setting. Although, qualitative methods have been reported in scholarly literature going back to the 1970s, such methods have yet to be utilized as frequently as quantitative methods (Denzin & Lincoln, 2000). The use of mixed methods is even more recent in the scholarly literature—going back roughly 15 years (Tashakkori & Teddlie, 1998).

Contextually it makes sense that many of the publications in the JSR are in the form of literature reviews, given that a substantial number have historically come from disciplines outside of the sciences. It also makes sense that many of these literature review publications occurred prior to 2008 (3 of 21 or 14.3% in 2002, 1 of 21 or 4.8% in 2003, 0 of 21 or 0% in 2004, 8 of 21 or 38.1% in 2005, 3 of 21 or 14.3% in 2006, 4 of 21 or 19.1% in 2007), as in the years since this time the university has been in transition to a more formalized research identity. Indeed, there were only two literature review publications in the JSR post-2008—one in 2009, and another in 2010.

Finally, that the second most frequent type of research method appearing in the JSR cannot be clearly specified may speak to a need for greater clarity around how the journal and relatedly university itself defines and categorizes research, and to the need for researchers to make explicit their methods when disseminating (Gambrel & Butler, 2013). At present, the guidelines for journal submission do not provide a definition of research nor clearly articulate which types of research methods are appropriate for publication in the journal. The guidelines do, however, articulate what types of articles are not appropriate for publication in the journal, which includes literature reviews, creative and/or fictional works (UW-Stout JSR, n.d.). Given that the research team identified several instances of content meeting such characterizations, it may be more consistent in terms of "fitness" of the published content with the guidelines for publication, if the journal removes this latter injunction.

As the definition of research in the context of this university becoming an ARI was a needed and helpful guide in the coding and related categorizing of research articles in the current content analysis, this definition may be a helpful one to include within the preface of the journal or in the submission guidelines. Additionally, findings from the mixed-data survey study of the university community as a whole reveal that the majority of participants ($n = 907$, 91%) agreed that this definition of research conceptually aligned

with their own definition in the context of the university as an ARI (Blumer et al., 2014a).

Increasing Attention to Ethics

Although attention to ethics has been variable over time, it is encouraging that over the lifespan on the journal, particularly in the last several issues, there is an encouraging trend as such attention appears to be growing. For example, in the second volume of the journal in 2003 only 20% ($n = 2$) of the 10 articles attended to ethics, and by the relative midpoint, or the seventh volume in 2008, over half, 57.14% ($n = 8$), of the 14 articles attended to ethics. In the twelfth, or what was the most recent volume of the journal in this analysis, from 2013, 38.5% ($n = 5$) of the 13 total articles attended to ethics. In analyzing the patterns around attention to ethics more closely, the team noted that the attention has held relatively consistent since 2007, with each of the volumes not dipping below 1/3 of the articles attending to ethics per volume since this year (6 of 13 or 46.15% in 2009, 7 of 16 or 43.75% in 2010, 12 of 19 or 63.15% in 2011, 5 of 13 or 38.5% in 2012). In considering this pattern in the context of the larger university setting, it may be the case that the students and faculty advisors engaging in research have paid greater attention to ethics as the university has done so, particularly since the inception of the Center for Applied Ethics in 2008 (UW-Stout Center for Applied Ethics, n.d.).

One way to support the trend around the increasing attention to ethics may be for the JSR to require, and provide examples of the way such attention can be included in submissions. For instance, at present the journal does include in its minimum requirements that submissions be "free of plagiarism and original in wording" (UW-Stout JSR, n.d.). Such an explicit focus on research integrity is reflective of findings from the mixed-data survey study of the larger university community in which participants were able to clearly articulate a qualitative understanding of the definition of research integrity (Blumer, Buchanan, & Klucarich, 2014b). Authors are also encouraged to continue the trend of being explicit in their scholarly work, particularly with regard to attending to ethics. One nominal way authors can do this is by noting obtainment of IRB approval in their writing.

Limitations and Future Directions

One of the common limitations associated with conducting a content analysis of scholarly journals is that the researchers often do not have access to rejected manuscripts submitted for publication, and because of this, it is difficult to determine the degree of bias in the submission and acceptance process (Blumer et al., 2012; Blumer et al., 2014). This was also the

case in the current content analysis. In addition, there were limitations with regard to the nature of the research process itself. Conducting research and writing collaboratively comes with both benefits and drawbacks. Collaborative writing teams composed of graduate students have noted the following benefits: pragmatism and efficiency in the collaborative process, camaraderie through collaboration, richness and variation in having different perspectives on the collaborative task, and a lessened opportunity for important details to be missed because there are multiple people involved in the reviewing of the co-constructed product (Blumer, 2010). In the current collaborative study, the team experienced each of these benefits with the exception of the last one. In earlier rounds of the analysis, certain details were overlooked. This was most likely because of the way in which the content of the analysis was divided amongst a rather large research team. Through the revisioning process, however, a more detailed analysis occurred, and the article count updated accordingly.

Despite these limitations, this analysis serves as a seminal study in the understanding of this student-based journal, and potentially in enhancing understanding of like journals across the campuses of the UW-System, as well as those from other ARIs or polytechnic universities across the United States. In order to determine how representative and applicable the current findings are to other state or nationally-based student university journals, future researchers could conduct similar analyses of like journals using the coded categories in the current study as a template. Finally, future researchers could conduct content analyses of the JSR using the same categorical coding process in order to examine both continuity and discontinuity in disseminated research patterns and practices.

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